

Seattle Permits

— part of a multi-departmental City of Seattle series on getting a permit

Rockeries: Prescriptive Design and Installation Standards

Updated October 6, 2004

Rockeries have long been common landscaping and erosion control features in Seattle. Proper rockery installation is the key to their long-term stability and safety.

The Department of Planning and Development (DPD) does not consider rockeries to be retaining walls. Different and stricter structural standards than those contained in this Client Assistance Memo (CAM) apply to retaining walls. Rockeries require firm, stable soil to provide part of their support and do not have sufficient structural strength to act as retaining walls. The standards in this CAM apply only to rockeries, not to structures used as retaining walls, whether constructed of rocks or any other material.

Permits Required

A building permit is required for all rockeries over four feet in height. Rockeries less than four feet in height do not require permits, unless:

- located on a site containing an Environmentally Critical Area (Seattle Municipal Code 25.09.020)
- there is a surcharge, impoundment of Class I, II, or III-A liquids (Seattle Residential Code R105.2.6)
- possible failure that could cause damage to adjoining properties or structures (Seattle Residential Code R105.2)

Even when rockeries do not require a permit, rockery installers are advised to follow the rockery design principles outlined in this publication.

Permit applications for rockeries must include a site plan showing the location of the rockery and a cross

section of the rockery providing the design details of the proposal. Rockery designs must either be prepared by a geotechnical engineer or comply with the Prescriptive Rockery Installation Design described below.

In certain circumstances, application for permits for installation of rockeries meeting the prescriptive standards may be made without appointment at the DPD Applicant Services Center (ASC), located on the 20th floor of Seattle Municipal Tower at 700 Fifth Ave. For these simple plans, compliance with installation standards, site plan and cross section will be checked in the field by a DPD building inspector.

Rockeries over six feet in height must be designed by an engineer and require application appointments and full plans for ordinance and structural review. The department may require an engineered design for a rockery of any size, particularly in soil sensitive areas and/or in the vicinity of property lines.

Prescriptive Rockery Installation Design

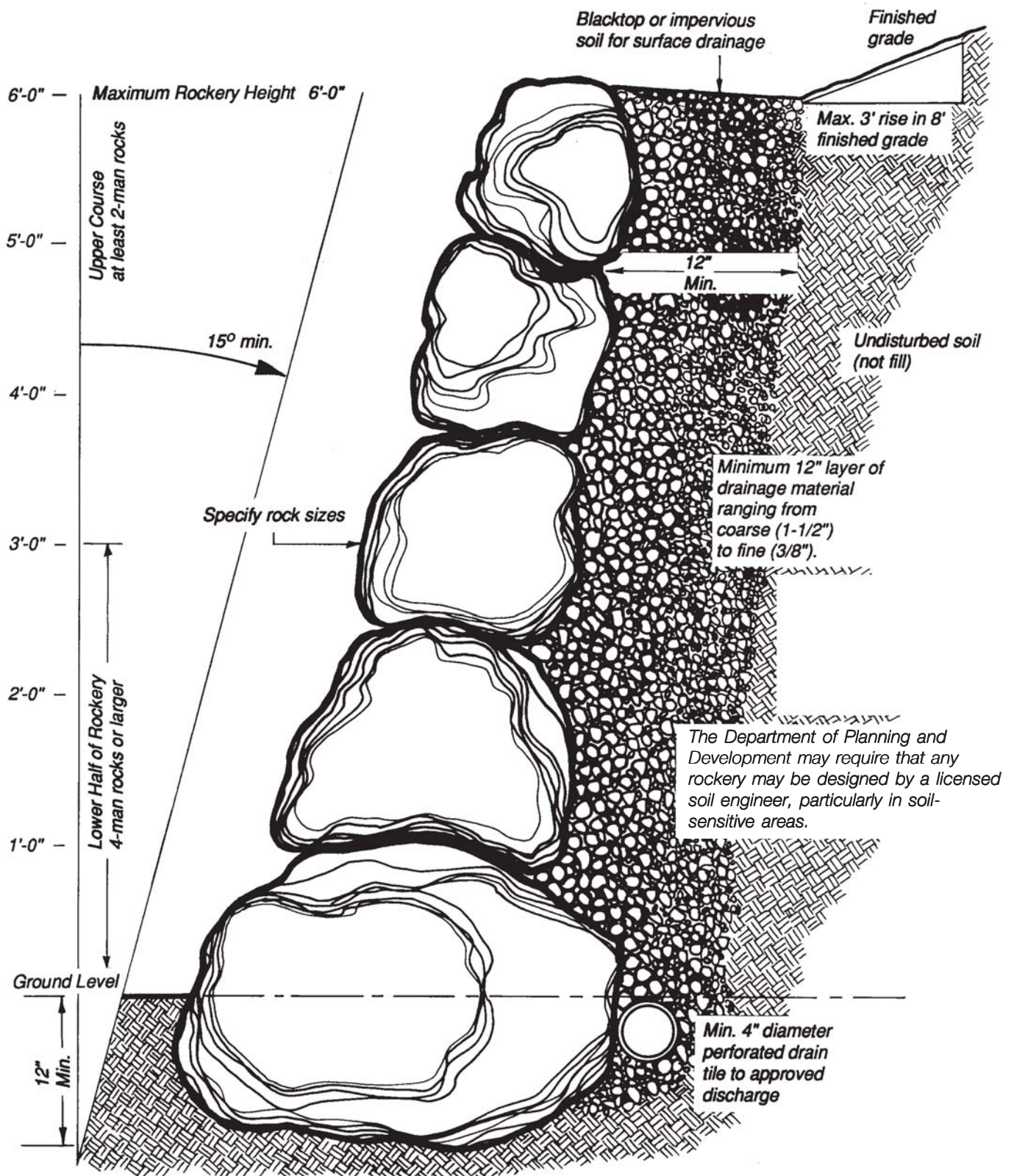
Height: Maximum of Six Feet

Rockeries installed in accordance with the prescriptive installation design standards described here and reflected in the diagram need not be designed by an engineer unless DPD determines special conditions exist. Any rockery exceeding six feet in height or varying from the prescriptive design requires an engineered design and requires formal permit application by appointment and a thorough plan review.

Location of Rockery

Rockeries must only be placed against stable slopes, consisting of firm, undisturbed soil. The face of the slope needs to be able to support the rockery. Drainage must be provided as outlined on the next page. Rockeries must not be placed against fill. No surcharge load, such as a building or driveway, may be placed on the rockery or within a distance equal to the vertical height of the rockery.





Ground Surface Above Rockery

The ground surface above the rockery should be relatively level. A maximum three foot rise over eight feet from the rockery surface is allowed for the slope above the rockery. After the installation of the rockery, the ground surface above the rockery should be finished with an impervious material, such as asphalt, starting at the top of the rockery and extending at least far enough back to cover the drainage material plus one foot of the stable, supporting slope.

Angle of Rockery Face

The face of the rockery shall be at least 15 degrees from the vertical. Maximum slope of the face of the rockery is one horizontal to four vertical.

Rock Sizes

For a rockery between four and six feet in height, the prescriptive standard requires that the lower half be constructed of four-man or larger rocks (defined below). For the upper half, progressively smaller rocks may be used, with a minimum size of two-man for the uppermost course. The plans must include the rock sizes to be used in the installation. (See approximate rock sizes in the table below.)

APPROXIMATE ROCK SIZES		
Size	Weight	Volume
1-man	58 - 210 lbs.	0.4 - 1.3 cubic ft.
2-man	265 - 580 lbs.	1.6 - 3.6 cubic ft.
3-man	760 - 1,830 lbs.	4.7 - 11.2 cubic ft.
4-man	3,000 - 4,000 lbs.	18.4 - 24.5 cubic ft.
5-man	5,000 lbs.	30.7 cubic ft.
6-man	7,000 lbs.	42.9 cubic ft.

Rock Placement

The base course of rocks must be embedded into firm undisturbed earth to a minimum depth of 12 inches to provide a secure footing for the rockery. The long dimension of the rocks must extend into the slope behind the rockery to provide maximum stability. Subsequent courses of rocks must be placed to lock into the rocks in the lower course or tier.

Drainage

A minimum of 12 inches of granular drainage material shall be placed between the undisturbed soil and the rockery. The drainage materials must be composed of gravel with particle sizes ranging from 1-1/2 inch to 3/8 inch. At the base of the rockery, a perforated drain tile, with at least a four-inch diameter, shall be installed within the drainage materials. The drain tile must drain to a point of discharge, approved by DPD per Seattle Public Utilities (SPU) standards. For further information, please call DPD's Drainage and Sewer Review Desk at (206) 684-5362.

Inspections

The rockery installer must call DPD's Inspection Services Division at (206) 684-8950 to schedule an appointment prior to placement of the base course so the inspector may verify the rockery height, soil condition, rock size, and provisions for drainage. A final inspection is also required once all work is complete.

Inspections may also be scheduled by calling DPD's 24-hour recorded inspection request line at (206) 684-8900.

Access to Information

Links to electronic versions of DPD **Client Assistance Memos (CAMs), Codes, and other helpful publications** are available on the "Publications" and "Codes" pages of our website at **www.seattle.gov/dpd**. Paper copies of these documents are available from our Public Resource Center, located on the 20th floor of Seattle Municipal Tower at 700 Fifth Avenue in downtown Seattle, (206) 684-8467.